

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A semiconductor fabricating apparatus having a resonant frequency sensor fabricated as a micro machine chip and disposed ~~[[in]]~~ through a wall of a processing chamber, wherein a change in ~~[[the]]~~ resonant frequency of said resonant frequency sensor is detected in order to determine ~~[[the]]~~ a maintenance timing.

2. (Canceled)

3. (Currently Amended) ~~[[A]]~~ The semiconductor fabricating apparatus according to claim 1, wherein:

the relationship between an amount etching or deposition and chamber condition at a predetermined position in said processing chamber is stored in a database; and

the change in the resonant frequency is compared with associated data recorded in said database in order to determine the maintenance timing.

4. (New) The semiconductor fabricating apparatus according to claim 1, wherein the resonant frequency sensor further includes:

a fixed part having a first electrode;

a vibrating part having a second electrode; and

a piezoelectric joint configured to couple the fixed part and the vibrating part,  
wherein the resonant frequency of the resonant frequency sensor is determined  
by a capacitance between the first electrode and the second electrode.

5. (New) The semiconductor fabricating apparatus according to claim 4,  
wherein the fixed part and the vibrating part are approximately 100 micrometer in  
length.

6. (New) The semiconductor fabricating apparatus according to claim 4,  
wherein the vibrating part is approximately 2 micrometer in thickness.

7. (New) The semiconductor fabricating apparatus according to claim 4,  
wherein the resonant frequency sensor is capable of detecting a degree of etching or  
deposition of approximately 1 micrometer.

8. (New) The semiconductor fabricating apparatus according to claim 4,  
wherein the piezoelectric joint further includes:

a first electrode;  
a second electrode, and  
a piezoelectric element sandwiched by the first electrode and the second  
electrode,

wherein the first electrode and the second electrode are coupled to an AC  
voltage to vibrate the vibration part.